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A systematic review of care pathways for psychosis in low-and middle-income countries

Philippa Lilford, Onali Bimalka Wickramaseckara Rajapakshe, Swaran Preet Singh

Abstract

Pathways to care for psychosis in high-income countries have been well studied, with the finding of an association between longer duration of untreated psychosis (DUP) and poorer outcomes focusing interest on care pathways to minimise treatment delay. Little is known about how people with psychosis in low-to middle-income countries (LMIC) present for help and specific care pathways that might be associated with treatment delays in those contexts. We conducted a systematic review using electronic databases (MEDLINE, PsychINFO, Embase, Ovid) to explore what proportion of patients with psychosis in LMIC are accessing care through traditional healers and whether this is associated with treatment delay. Studies were included if they assessed the pathway to care for participants with a psychotic illness in a LMIC. From 3929 results, 15 studies met our inclusion criteria. In 7 out of 15 studies first contact for the majority of patients were traditional health practitioners (THPs). In 5 out of 15 studies, mental health practitioners (MHPs) were most often the initial care pathway and in 3 studies first contact was with primary care. DUP ranged from a mean of 30 weeks to 225 weeks. Accessing THPs as initial contact was associated with a longer DUP. In LMICs, a large proportion of patients use THP as their first point of contact for accessing care. This is associated with longer DUP. Services in these countries need to focus both on raising public awareness and collaborative working with THPs to facilitate access to biomedical care.

Keywords: Psychosis; LMIC; care-pathway; schizophrenia; traditional-healers

DECLARATION OF INTEREST

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Introduction

Pathways to care for psychosis in high-income countries have been studied extensively. (Singh and Grange, 2006),(MacDonald et al., 2018) This knowledge, along with an understanding that a longer duration of untreated psychosis (DUP) is associated with poor outcomes (Marshall et al., 2005),(Singh, 2007), has helped shape services in high-income countries. Early Intervention (EI) services aim to reduce DUP and therefore improve outcomes for people suffering from first episode psychosis (FEP). Prolonged DUP has been associated with lower quality of life, impaired functioning and more severe symptoms.(Marshall et al., 2005) There are similar findings in low-to middle-income countries (LMICs), with a longer DUP being associated with increased disability and poorer response to treatment.(Farooq et al., 2009)

We know that in high-income countries access to care is varied, and there are ethnic differences to how people access care, including more police involvement and compulsory admissions for ethnic minorities.(Singh et al., 2007) Care pathways for mental illness in LMICs are complex and pluralistic, often involving services such as traditional and religious healers. In Africa(Sorsdahl et al., 2009) and the India subcontinent (Biswal et al., 2017) traditional health practitioners (THPs) are an important care pathway for patients with common mental illnesses such as depression and anxiety, however disorders such as psychosis require additional biomedical care to improve outcomes.

Biomedical care refers to evidence based, contemporary medical practice. Biomedical treatments for psychosis include pharmacological and non-pharmacological treatments such as antipsychotic medication, recovery-orientated care and psychotherapy. Traditional healing refers to care which is embedded in indigenous epistemology.(Singh and Madhavan, 2015) Traditional healers (TH) do not have medical training, but are considered as health care providers in the local community and use plant or animal substances and incorporate local beliefs relating to mental wellbeing and the determinants of mental ill health.(Singh and Madhavan, 2015)

Pathways to care are defined as “the sequence of contacts with individuals and organizations prompted by the distressed person’s efforts, and those of his or her significant others, to seek help”.(Rogier LH, 1993) This definition helps show that “pathways to care is a much broader concept than simply help-seeking, since it encompasses service structures and ‘non-sought’ routes to care, as well as help-seeking by individuals or people close to them”.(Singh and Grange, 2006) This is important because it is not just lack of help-seeking which has been shown to impact DUP, but also access systems and processes to local services. THPs are accessed by patients in LMICs for many reasons. Mental health resources in LMIC are significantly underfunded (Saxena et al., 2007) which plays a part in patients seeking help through THPs.(Burns and Tomita, 2015) In addition, studies point towards different illness models in LMIC, for example beliefs that psychosis is caused by witchcraft rather than a biological illness,(Shah et al., 2017) which will influence where a person with psychosis presents. Interestingly minority communities in the West continue to hold on to their culture-specific attributions of mental illness, which determine their pathways to care.(Singh et al., 2015)

Understanding how patients with psychosis access care in LMICs is crucial before services can be developed to improve outcomes. A previous systematic review has investigated care pathways for mental disorders (not specifically psychosis) in Africa (and not other LMICs). This revealed that nearly half of those seeking formal health care for mental disorders initially accessed care through THPs.¹² To our knowledge this is the first systematic review of pathways to care specifically for psychosis based in low-and middle-income countries (LMICs) and this is important given the proven effectiveness of biomedical care in mental health conditions such as psychosis.

We conducted a systematic review to with the aim to:

- 1) explore the care pathways for psychosis in LMIC

- 2) explore what proportion of patients with psychosis in LMIC are accessing care through THPS
- 3) explore whether initial access to THPS has a detrimental effect by increasing treatment delay.

Methods

The systematic review protocol was registered with POSPERO Centre for Reviews and Dissemination (ID: CRD42019139252)

Search strategy

The search strategy used can be found in Table 1. Four electronic databases were searched:

MEDLINE (1946 onward), PsychINFO (1806 onward), AMED (1985 onward) and Embase (1980 onward). References of relevant articles were also reviewed. Articles were screened between May and June 2019.

Table 1: Search strategy

psychosis or schizophrenia or first-episode-psychosis or (first episode psycho*) or (first-episode psycho*) or (first-episode schizo*) FEP or (emerging psycho*)
AND pathway or (path* to care) or (care pathway) or (pathway to ment*) or (pathway to psy*) or (paths to psy*) or (first-contact) or (paths to men*)

Article screening and inclusion criteria

Titles and abstracts of all articles obtained from the search strategy were independently screened by two authors PL and OR. Full texts of the abstracts which met the inclusion criteria were reviewed.

Only published articles rather than posters were included. Articles were included if they were based

in LMIC, included data on psychotic illnesses and pathway to care. Only articles written in English were included. All study designs were included and all population groups including inpatient, outpatient and general population. We excluded studies which were based in high-income countries, reviewed all psychiatric illnesses without separating initial care pathway for psychotic illnesses, or included organic mental illness including substance misuse as a primary diagnosis.

Where there was disagreement, the full article was reviewed and consensus was reached in all cases without the need for the third author to review.

Data extraction

For the studies which met the inclusion criteria, two reviewers (PL, OR) independently extracted the relevant data. Details on the study were recorded including study setting and design. Socio - demographic data of included participants were recorded including mean age, ethnicity, country of origin and diagnosis. The measurement instrument for determining the care pathway was extracted and the referral source. Initial care provider (ie first contact along the pathway to care) was recorded. First contact was recorded as; general practitioner, mental health practitioner (including psychiatrists), social workers, police, traditional or religious healers, general hospitals (included accident and emergency), psychiatric hospital admission or other.

If given, the number of care pathways before biomedical treatment was initiated was extracted as well as data on treatment delay including DUP.

Data synthesis

Due to the heterogeneity between studies a narrative synthesis of the data was constructed. This narrative synthesis incorporated the population and country in which the research was conducted,

care pathway used and key findings related to that pathway including any information on treatment delay, mainly DUP.

Pathways to care

Different components of the care pathway can be measured. These include the care provider initially accessed, most frequently accessed or finally accessed (ie the care provider which led to referral into the correct service). The majority of included studies recorded information on the initial contact- ie the first contact along the pathway to care, which we focus on in this review. Two studies (Lund et al., 2010), (Burns et al., 2011) explored which care pathways had been accessed, but did not specify whether this was first contact.

Treatment delay

Definitions of DUP varied between studies and some studies were more specific regarding onset of psychotic symptoms. In addition, there was variation in whether treated psychosis referred to first contact with mental health practitioners (MHPs), initiation of antipsychotic medication or admission to psychiatric hospital. DUP was recorded in weeks and was recorded as mean or median depending on the available results.

Delay in treatment for multi-episode patients was defined as the interval between the onset of relapse symptoms and admission to a psychiatric hospital.(Temmingh and Oosthuizen, 2008)

Results

The search strategy generated 3929 studies. Of these, 21 were selected as potentially relevant alongside two additional papers identified through the references.

Full articles of these 23 studies were examined and 15 met the inclusion criteria (see Figure 1). Eight studies were excluded due to the following reasons; conducted in a high-income country (n=1), poster abstract available rather than a published article (n=3) (authors were contacted to ensure no manuscript was available), published in French (n=1), majority of participants had a substance misuse diagnoses (n=1), no included measure of the pathway to care (n=1) or mental illness was reviewed in general without specifying figures for psychosis (n=1).

Study characteristics

Studies were carried out in a range of LMI countries (n=9) and their details are summarised in Table 2. Countries included Pakistan, India, Bangladesh, South Africa, Ghana, Nigeria, Malawi, Malaysia and Iran. All included studies were cross-sectional in design and varied in sample size; from the smallest in Malaysia (n=38) to the largest in Nigeria (n=652). There appears to be no consensus instrument to measure or assess pathway to care, and studies had used different instruments. The majority of studies used a semi-structured questionnaire (n=10) to measure the pathway to care, and six of these ten were developed from the encounter form used in the World Health Organization (WHO) collaborative study.(Gater et al., 1991)

Mean ages of included participants ranged from 25.8 to 37.6 years. Majority of studies specified that diagnostic criteria was in accordance with DSM-IV or ICD-10 (see Table 2). Six studies recruited participants from psychiatric inpatient services. Six studies recruited from outpatients, including from psychiatric and medical clinics. Three studies sampled participants from both inpatient and outpatient settings.

Referral source

The referral sources identified were through friends and family, self-referral, police, legal systems or health professionals. Six studies provided data on referral source into a care pathway (see Table 2). Majority of these (n=4) showed that friends and families were the most common source of referral into care, ranging from 33.1% in Iran (Sharifi et al., 2009) to 79.1% in South Africa. (Burns et al., 2011) Self-referral was 10% in Malawi (Chilale H, Banda R, Muyawa J, 2014) and 14.3% in South Africa (Tomita et al., 2015). In this South African study 6.1% were also referred by the police. In the same Iranian study 16.5% were referred by legal systems and 31.9% by health professionals. (Sharifi et al., 2009)

One study from Nigeria showed that daily contact with family was associated with an increased use of medical services by patients with schizophrenia (OR 2.2 95% CI 1.4-8.3, p=0.03) .(Lasebikan et al., 2012)

Pathways to care

Four studies recorded number of care pathways consulted before biomedical treatment was initiated. One study from Bangladesh found a mean of 2.7 (SD 1.0) care pathways were consulted (Giasuddin et al., 2012), in Pakistan (Naqvi et al., 2009) a mean of 1.6 and median of two care pathways and in a study in South Africa, a mean of 2.6 (SD 1.2) care pathways were consulted before biomedical treatment was initiated. (Temmingh and Oosthuizen, 2008) For multi-episode psychotic illnesses in the same South Africa study the number of care pathways consulted was fewer, with a mean of 2.1 (SD 0.9). (Temmingh and Oosthuizen, 2008) A study in India found patients with FEP consulted a median of seven (IQR 6) different health care providers. (Jilani et al., 2018)

First contact for the majority of studies (n=7) were traditional/religious healers (see Table 3), followed by mental health practitioners (MHPs) including psychiatrists (n=5), and then general practitioners (n=3). General hospitals (n=1) or psychiatric hospitals (n=1) were infrequently the first care pathway accessed (see Table 3).

Studies where THPs were most frequently accessed included African countries (South Africa(Burns et al., 2011), Nigeria (n=2)(Lasebikan et al., 2012),(Adeosun et al., 2013) and Malawi(Chilale H, Banda R, Muyawa J, 2014)) but also India(Jilani et al., 2018), (n=2) and Bangladesh (n=1)(Giasuddin et al., 2012). Countries in which the largest proportion of patients initially consulted mental health professionals were South Africa(Temmingh and Oosthuizen, 2008), Ghana(Ibrahim et al., 2016), Iran(Sharifi et al., 2009) and Pakistan(Naqvi et al., 2009),(Naqvi H, Khan MM, 2005) (n=2). GP's (n=2)(Temmingh and Oosthuizen, 2008),(Lund et al., 2010) or general medical facilities (n=1)(Tomita et al., 2015) were accessed by the majority of patients in three South African studies. In Malaysia the majority of patients accessing care for the first time with a psychotic illness were admitted to a psychiatric hospital.(Gill JS, Koh OH, 2005)

Treatment delay

Nine of the fifteen included studies reported DUP (see Table 3). DUP ranged from a mean of 30.1 weeks (SD 62.1) in South Africa(Burns et al., 2011) to a mean of 225 weeks in Malawi(Chilale H, Banda R, Muyawa J, 2014).

In a South African study, participants who had consulted a THP had a mean DUP of 65.2 weeks, compared to a mean of 17.3 weeks ($p=0.005$) for those who never consulted a THP (Burns et al.,

2011). In the same South African study, previous contact with a THP was associated with higher rates of negative symptoms ($p=0.013$)(Burns et al., 2011). In two other South African studies, first contact with THPs was associated with a longer DUP (Tomita et al., 2015),(Temmingh and Oosthuizen, 2008). Median DUP after initially consulting a THP was 427 weeks, compared to a median of 284 weeks after consulting a MHP and 7.4 weeks if first contact was with a public sector medical service.(Temmingh and Oosthuizen, 2008)

Similarly, a Nigerian study found a mean DUP of 101.8 weeks, with a short DUP (≤ 38 weeks) in 86% of those who had contacted a physician first, compared to 33.7% of those who had first accessed a THP care pathway ($p<0.001$)(Adeosun et al., 2013). DUP was >38 weeks in 66.3% of those who attended THPs initially, and 14% in physician associated first contact.(Adeosun et al., 2013)

The study which showed the longest DUP was based in Malawi where the majority (63.7%) of participants accessed care through THPs.(Chilale H, Banda R, Muyawa J, 2014) In this study, mean DUP was 255 weeks for those who accessed care through THPs, although remained high at 179.8 weeks for those who initially accessed care through physicians.

In an Iranian study those who initially sought help from general practitioners had the shortest DUP, and those contacting psychiatrists had the longest. DUP for patients who first got help from traditional healers were in between.(Sharifi et al., 2009)

While specifying initial care provider specifically for patients with psychosis, some studies provided figures for treatment delay for all psychiatric conditions, not only for psychosis. Three studies recorded measures of treatment delay other than DUP. One study based in India found that the largest treatment delay was associated with those initially accessing THPs, with a delay of 93.4 weeks and those accessing care through religious healers with a delay of 54.8 weeks(Lahariya et al.,

2010). This was not specific to psychosis (although the majority of participants had bipolar affective disorder or schizophrenia).(Lahariya et al., 2010)

A study in Bangladesh provided data on treatment delay for all mental illnesses (not specific for psychosis). In this study, accessing MHPs was actually improved by first consulting a THP (median 6 weeks) as compared to a private practitioner (median 78 weeks).(Giasuddin et al., 2012)

In a study in South Africa, a majority of participants (62%) sought care from their GP prior to admission to a psychiatric hospital and only 26% received treatment of which the majority received anxiolytics rather than anti-psychotics(Lund et al., 2010). Similarly, in another South African study where 38.1% of patients sought initial help with their GPs, the median DUP was 95.5 weeks.(Temmingh and Oosthuizen, 2008)

Discussion

This systematic review, the first of its kind, has found that in LMICs, a large proportion of patients with psychosis use traditional or religious healers as their first point of contact for accessing care. Accessing care through THPs was generally associated with treatment delay. Studies in a range of countries found an association between first contact with THPs and prolonged DUP, whilst first contact with biomedical healthcare services resulted in a shorter DUP.

Local services and associated treatment delays varied. In Bangladesh, accessing THPs was associated with a shorter treatment delay than when accessing care through private medical practitioners.(Giasuddin et al., 2012) In Iran, patients who sought help from general practitioners first had the shortest DUP, and those contacting psychiatrists had the longest.(Sharifi et al., 2009)

First contact with primary care in South Africa was not associated with reduced DUP in this review. However, one of the South African studies included here, had a very small sample size (21 FEP patients)(Temmingh and Oosthuizen, 2008), and both South African studies were based in inpatient settings which may not be representative of the general population.(Singh and Grange, 2006) Patients seeing their GPs may well be being treated and avoid admission altogether.

There are some important limitations which must be considered in light of these results. First, there are multiple factors which affect DUP which may act as confounders in the relationship between DUP and the care pathway accessed. Socioeconomic factors, substance misuse and severity of the disease were not explored in these studies, of which all could help explain the relationship between DUP and care pathways with THPs. For example, those with the most severe forms of psychosis may have less insight and be less likely to see biomedical services as a result. Secondly, many of the sample sizes were small, and used convenience sampling, often of inpatients in psychiatric hospitals in large capital cities. These results, therefore, may not be representative of community dwelling patients in rural areas. Third, access to care and onset of psychotic symptoms are determined retrospectively and are therefore subject to recall bias. Finally, there is no consensus instrument to measure pathways to care which reduces the validity of the comparison of patient journeys through care in LMIC.(Singh and Grange, 2006)

Another limitation is the setting in which these studies were conducted. All included studies used patients who had already presented to biomedical services and then retrospectively determined which care pathway was initially consulted. This may not be representative of people who never present to biomedical services. This is important given many patients stay in THP care, never seeking care in biomedical services (World Health Organization, 2002),(Chadda et al., 2011) and we therefore know nothing about their outcomes. In addition, all studies were cross-sectional in design and therefore the information we have captured relates to first contact along the pathway to care.

To understand an individual's help-seeking behaviour more thoroughly it would be important to review a longitudinal perspective.

Another important consideration is the term THP; which is a highly heterogeneous term and includes religious healers, diviners, and herbalists among many others.(Zuma et al., 2016) There may be wide variation amongst their practices, approach to treating psychosis and associated treatment delays. In addition, this review only included articles written in English and may therefore have omitted relevant studies conducted in non-English speaking countries.

Despite these limitations, this review provides important insights into how people with psychosis present to services in the pluralistic care pathways setting of LMIC. This systematic review confirms previous findings that a high proportion of patients with psychosis are seeking help through THPs and that this contact is associated with treatment delay in accessing biomedical care. The mental health treatment gap, the difference between the number of people who need care and those who receive care, is as high as 76-85% in LMICs.(Demyttenaere et al., 2004) Understanding care pathways and associated delays is crucial to developing referral routes which will improve this treatment gap in LMICs and understanding the barriers to accessing quality care will also be required.

THPs may have an important role in alleviating suffering in LMICs and it has been demonstrated that THPs can improve symptoms in mood and anxiety disorders.(Nortje et al., 2016) Significant mental illnesses (SMIs) such as psychosis, however, require biomedical care, and no evidence exists that THPs improve outcomes in patients with psychosis. As our systematic review demonstrates, THPs are detrimental in psychosis as they lead to treatment delay accessing biomedical care.

Not only does accessing THPs lead to a delay in accessing biomedical care, it can lead to coercive or abusive practices.(Ciftci et al., 2013) Restraining people with SMIs with chains is widespread in

LMICs(Guan et al., 2015), (Molodynski et al., n.d.),(Minas and Diatri, 2008), (Asher et al., 2017),(Ndetei, D.M. and Mbwaiyo and Seedat, 2010), (World Health Organization, 2019), (van der Watt et al., 2018). Practices such as chaining also reveals the complex and at times opposing ethical and epistemological differences between biomedical and THP care. This is important when thinking about how to improve access to biomedical care in LMICs. In a Ghanaian RCT where medication was given alongside usual practice, despite the medicated group experiencing a reduction in their symptoms, they remained chained.(Human Rights Watch, 2012) Interventions aimed to improve outcomes in psychosis, therefore, cannot simply transport Western biomedical practices onto such complex pluralistic care pathways. An appreciation of these complexities and of the world view of the patients and those who provide care must be taken into account when considering how to improve access to biomedical care for patients with psychosis in LMIC.

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Figure 1: PRISMA flow chart of included studies

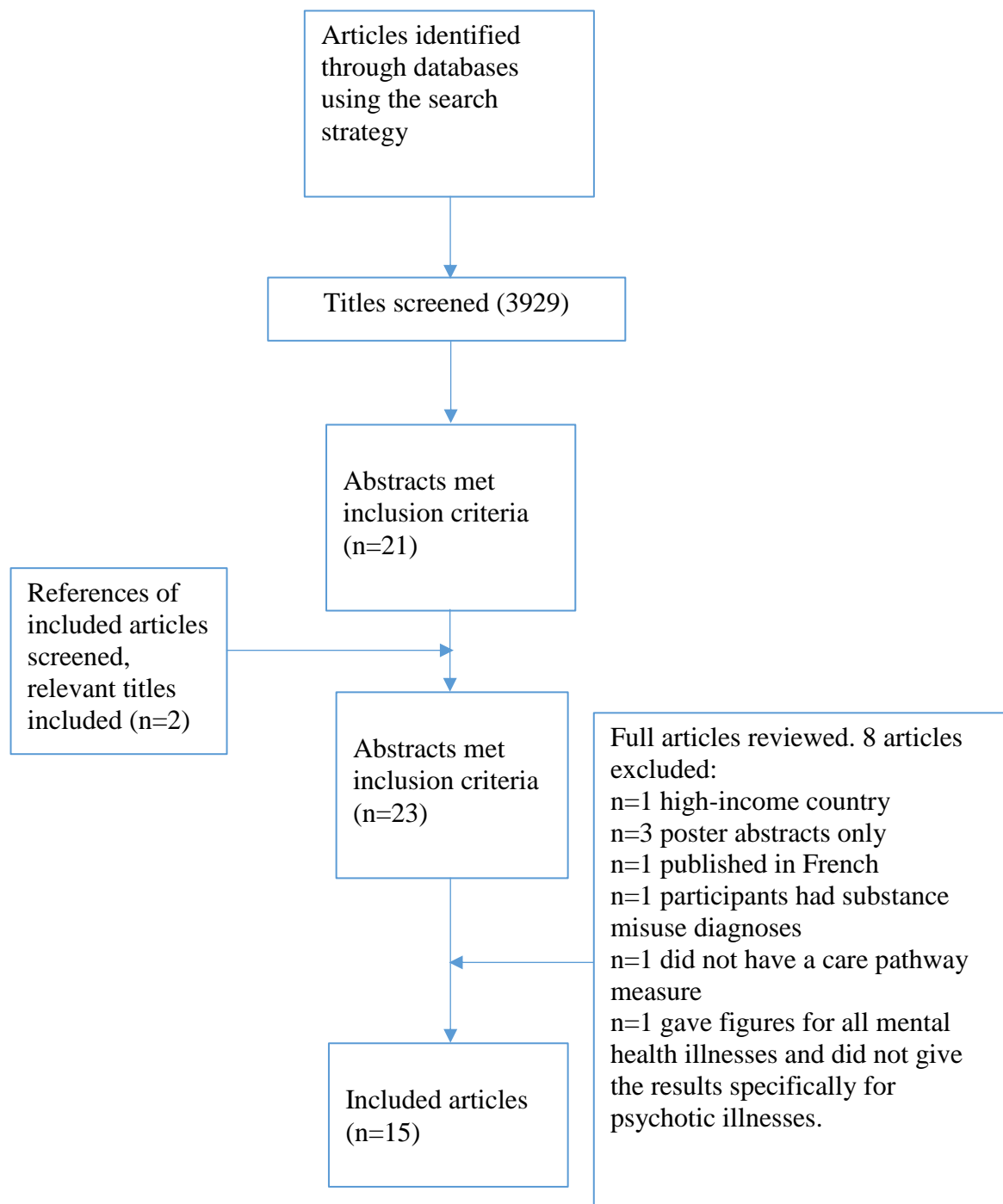


Table 2: Study characteristics

Study	n	Country	% male	Mean age	Main diagnoses	Diagnostic criteria	Instrument used to measure care pathway	Referral initiators
Naqvi, H et al. 2009 ⁽²⁴⁾	93	Pakistan	59	males:35 years (SD 10.4) females: 32 years (SD 10.0)	Schizophrenia	ICD-10	Explored through a questionnaire originally developed by Perkins, et al ¹ , adapted for local use.	-
Burns JK et al. 2011 ⁽¹⁶⁾	54	South Africa	70	25.8 (SD 8.1)	Schizophreniform disorder, schizophrenia and schizoaffective disorder and for whom first-episode status was confirmed	DSM-IV	No instrument specified	79% families
Gill JS et al. 2005 ⁽²⁹⁾	38	Malaysia	58	-	First episode psychosis (schizophrenia, schizophreniform, brief psychotic disorder, psychotic depression, psychotic mania)	DSM-IV	No instrument specified	-
Temmingh HS, 2008 ⁽¹⁷⁾	71 (21 first-episode and 50 multi episode participants)	South Africa	49.3	34.1	Psychotic disorder (schizophrenia, schizophreniform disorder, schizoaffective, bipolar type 1 with psychotic features and psychosis not otherwise specified)	DSM-IV	A semi-structured pathways questionnaire based on the WHO Encounter form	-
Sharifi V et al. 2009 ⁽¹⁹⁾	91	Iran	58.2	27.4 years (SD = 9.8)	Bipolar 1 disorder (mania with psychotic features) 40.6%, schizophrenia 27.4%, other less common: major depressive disorder with psychotic features, schizophreniform disorder, brief psychotic disorder and psychotic disorder not otherwise specified.	DSM-IV criteria	No instrument specified	families (n = 30, 33.1%), health professionals (n = 29, 31.9%) and the legal system (n = 15, 16.5%).
Tomita A et al. 2015 ⁽²¹⁾	57	South Africa	64.9	21-29 (mean age not given)	Schizophrenia, schizoaffective disorder, bipolar disorder and psychosis not otherwise specified	-	Translated WHO Encounter Form	Family/relative:m36 (73.5%), Friend: 2 (4.1%), Patient-initiated: 7 (14.3%), Police: 3 (6.1%), Psychiatrist: 1 (2.0%)

¹ Perkins DO NJ, Bell K, Liberman JA (1999) Factors that contribute to delay in the initial treatment of psychosis *Schizophr Res* 36: 52.

Table 2: Study characteristics

Adeosun II et al 2013 ⁽²⁶⁾	138	Nigeria	39.9	36.29	Schizophrenia	ICD-10	Semi structured questionnaire based on data from the existing literature in Africa	-
Jilani A et al. 2018 ⁽²⁵⁾	151	India	80.79	27.19	First episode psychosis	ICD-10	Modified semi structured proforma of the WHO encounter form	-
Chilale H et al. 2014 ⁽²⁰⁾	135	Malawi	60.7%	34.49 years, SD= 11.704	Schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, bipolar I disorder. Brief psychotic disorder, psychotic disorder NOS	DSM-IV	-	10% sought help by themselves
Lasebikan V et al. 2012 ⁽²²⁾	652	Nigeria	52.6	29	Schizophrenia (368), schizoaffective disorder (70), mania with psychosis (137), and severe depression with psychosis (77)	DSM-IV	Questionnaire on care-seeking behaviour	
Ibrahim A et al. 2016 ⁽²⁷⁾	36 participants with schizophrenia out of a total of 107	Ghana	49.5	37.4	Schizophrenia	-	Semi-structured interviewer administered questionnaire based on the WHO encounter form	-
Lund C et al 2010 ⁽¹⁵⁾	152	South Africa	73	35	Schizophrenia, schizophreniform disorder, or schizoaffective disorder	-	semi-structured questionnaire	-
Lahariya C et al. 2010 ⁽³⁰⁾	295 (106 with schizophrenia)	India	68.8	Majority between 16 and 45 years	Schizophrenia	DSM-IV	pre-tested proforma along with the tool used in a WHO collaborative study	
Naqvi I et al. 2010 ⁽²⁸⁾	252	Pakistan	52.7	37.6	Schizophrenia	ICD-10	self designed semi-structured questionnaire	-
Giasuddin N et al. 2012 ⁽²³⁾	50 (13 with psychosis)	Bangladesh	58	25.8	Schizophrenia, schizotypal and delusional disorders	ICD-10	semi-structured questionnaire based on WHO collaborative study.	Most referrals were from family members (12), one was self-referral

Table 3: First care pathways accessed and DUP

Study	n	Country	GP (%)	Mental health practitioners (%)	Traditional /religious healer (%)	A&E/general hospital/other specialist doctors (%)	Psychiatric hospital admission (%)	Police (%)	Other(%)	DUP
Naqvi, H et al. 2009 ⁽²⁴⁾	93	Pakistan	5	43	15	5			32 (teachers, social workers, psychologists and other caregivers)	Mean DUP 64 weeks
Burns JK et al. 2011 ⁽¹⁶⁾	54	South Africa	16 ¹		38.5 ²					Mean DUP 35.08 weeks (SD 62.10) Median DUP 6 weeks Those who consulted TH: Mean DUP 65.15 weeks Those that had not consulted TH: Mean DUP 17.31 weeks
Gill JS et al. 2005 ⁽²⁹⁾	38	Malaysia	15.8 ³		18		65.8			Median DUP 12 weeks
Temmingh HS, 2008 ⁽¹⁷⁾	21 FEP	South Africa	38.1	9.5	9.5	14.2		23.8	4.7 (includes social workers, pharmacists, paramedics)	Mean DUP 95.5 weeks Initial contact with THP: Median DUP 427.6 weeks Initial contact with public sector general medical service: Median DUP 7.4 weeks Initial contact with MPH: Median DUP 284.7 weeks
Temmingh HS, 2008 ⁽¹⁷⁾	50 multi-episode	South Africa	12	38 ⁴	4	18		26	2	Symptom relapse until admission to psychiatric hospital: Median 10 weeks (71 days, IQR=132)

¹ Accessed prior to final care pathway (not necessarily first contact)² Accessed prior to final care pathway (not necessarily first contact)³ Private and governmental GPs⁴ Private GPs

Sharifi V et al. 2009 ⁽¹⁹⁾	91	Iran	17.6	25.3	23.1	14.3	14.3			Median DUP 11 weeks Initial contact with GP: Median DUP 2.79 weeks Initial contact with a psychiatrist: Median DUP 38 weeks Initial contact with THP: Median DUP 12 weeks
Tomita A et al. 2015 ⁽²¹⁾	57	South Africa	3.9	3.9	11.5	73.1		1.9	1.9: Social worker 3.9: Non-specified clinic	Participants who had first contact with THP, ages 21-29 years, higher educational attainment, married/stable partnership status and low income had longer DUP (figures not provided)
Adeosun II et al 2013 ⁽²⁶⁾	138	Nigeria	13.8 ⁵	17.4	69					Median DUP 38 weeks. DUP was short (≤ 38 weeks) in 86% of physician first contacts, compared to 33.7% of non-orthodox contact ($p < 0.001$). DUP was long (> 38 weeks) in 14% physician first contact and 66.3% of non-orthodox contact
Jilani A et al. 2018 ⁽²⁵⁾	151	India	6 ⁶	13.3	60.3				20.5: local practitioner ⁷	
Chilale H et al. 2014 ⁽²⁰⁾	135	Malawi			60	28			9	For the majority (n=132) mean DUP: Initial hospital contact: 179.8 weeks Initial THP contact: 255 weeks Initial 'Other' contact: 49.8 weeks

⁵ GP/medical practitioner

⁶ General medical practitioner (qualified allopathic medical practitioner with an MBBS degree or Postgraduate in any discipline of allopathic medicine except psychiatry)

⁷ Includes practitioner qualified in another discipline of medical science or a non-qualified village/local health practitioners.

Lasebikan V et al. 2012 ⁽²²⁾	652	Nigeria		12.3 ⁸	45.7 ⁹	9.3			33.2 (herbalist or other sources of help for psychological problems)	-
Ibrahim A et al. 2016 ⁽²⁷⁾	36	Ghana		50	30.6	19.4				-
Lund C et al 2010 ⁽¹⁵⁾	152	South Africa	62 ¹⁰			28	22			No measure of DUP. High-frequency users of psychiatric services ¹² were admitted sooner after their first symptoms despite tending to live further away from the treating hospital.
Lahariya C et al. 2010 ⁽³⁰⁾	106	India		7.5	81.2				11.3 (allopathic practitioner)	- Delay at presentation: 45 weeks -Longest delay associated with traditional healer contact (93.4 weeks) and then faith healers (54.8 weeks)
Naqvi I et al. 2010 ⁽²⁸⁾	252	Pakistan	10	74.9	5.8	9.2				-
Giasuddin N et al. 2012 ⁽²³⁾	13	Bangladesh	42.9	7	35.7	14.2				Median DUP 44 weeks

⁸ 7.8% MHS within a general medical setting 4.5% within specialist psychiatric service

⁹ 12.1% priest, 33.6% spiritualist or natural therapist

¹⁰ All figures provided in this study are relating to contact accessed prior to the final care pathway (not necessarily first contact)



Part of the same study



Most frequently accessed first care pathway